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imagery analysis report

**Wuzhai-1 Missile Train, China (S)**

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## WUZHAI-1 MISSILE TRAIN, CHINA (S)

### INTRODUCTION

1. (TSR) A missile train used to transport the Wuzhai-1 (WU-1) solid-propellant missile has been identified at four Chinese WU-1 missile-related facilities. The missile train has also been observed at two other installations not previously known to be WU-1 missile related (Figure 1). This report is classified TOP SECRET RUFF because of the unique signature of the train.

### DESCRIPTION

2. (TSR) The WU-1 missile train consists of three different railcars (Figure 2)—one type H missile railcar, one type B4 missile transfer flatcar, and one undesigned missile railcar, which has

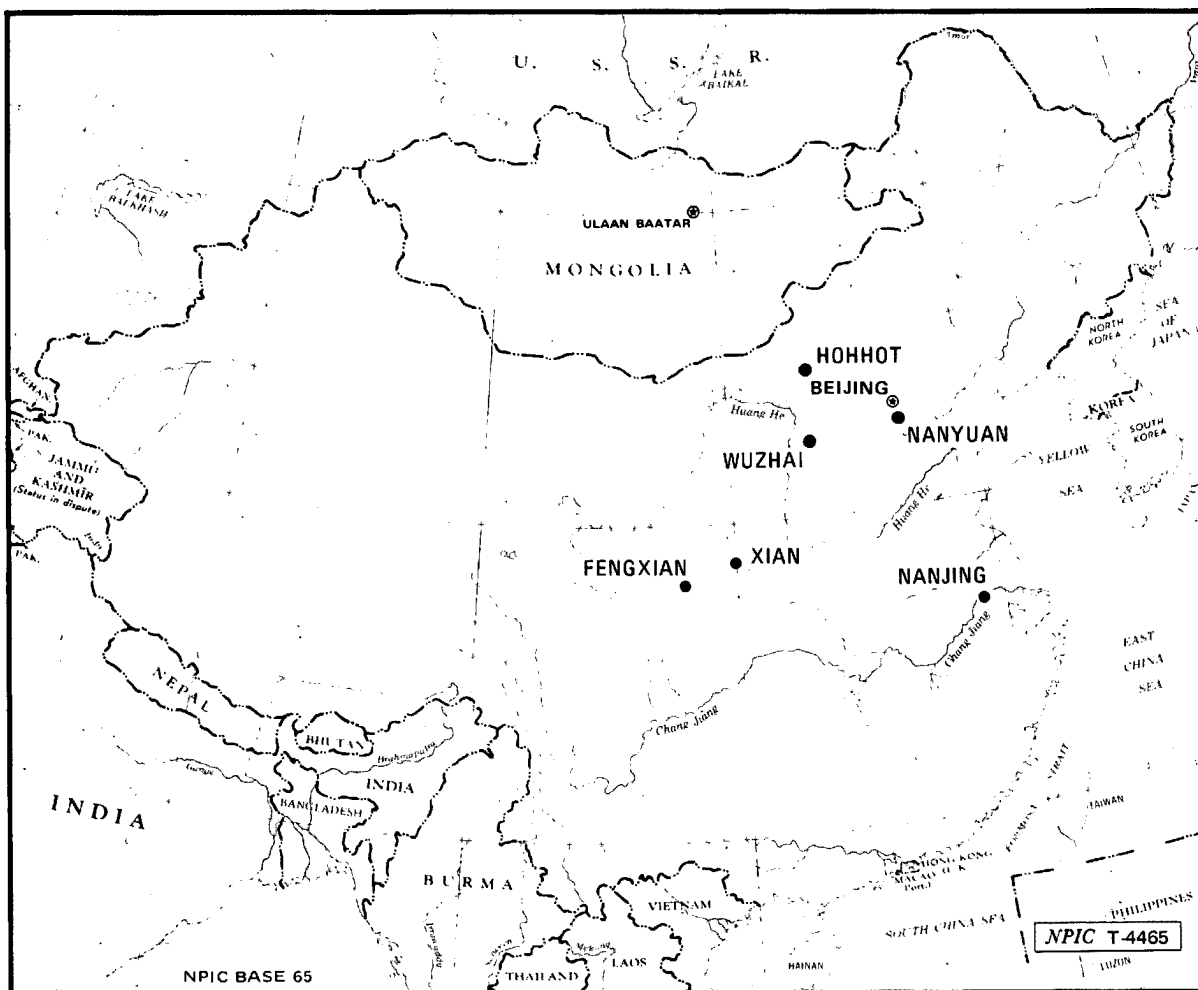
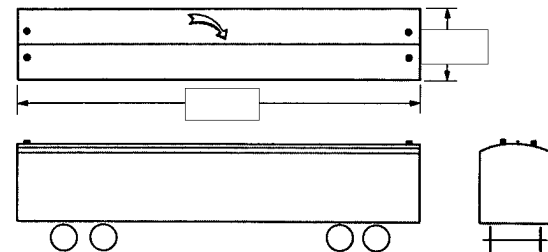


FIGURE 1. LOCATIONS OF THE WU-1 TRAIN AT MISSILE-RELATED FACILITIES IN CHINA

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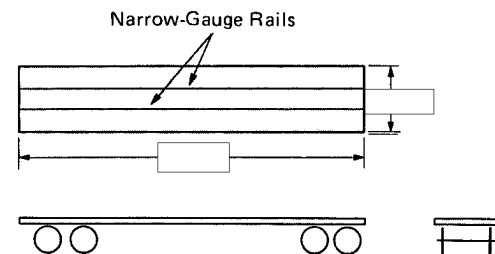
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**Type H Missile Railcar**--a strip or conduit extends the entire length; two vents/hatches are at each end.

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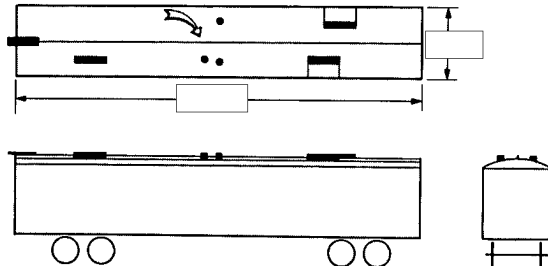
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**Type B4 Missile Transfer Flatcar**--two narrow-gauge rails extend the entire length.

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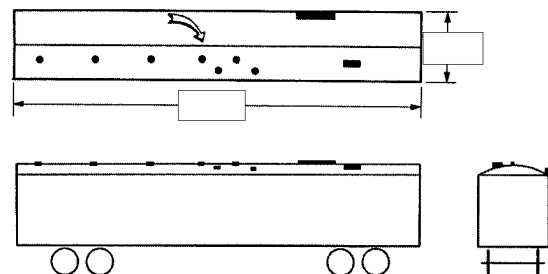
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**Hohhot-A Railcar**--this railcar has been reported as a type-L propellant railcar (see below), but its roof fixtures are arranged differently. A strip or conduit extends the entire length; there are four rectangular hatches/objects and three vents/hatches.

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**Type L Propellant Railcar**--a strip or conduit extends the entire length; there are two rectangular hatches/objects and seven vents/hatches.

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- Vent/hatch
- Hatch/object
- ↪ Strip or conduit

NPIC T-4466

**FIGURE 2. WU-1 MISSILE-RELATED RAILCARS**

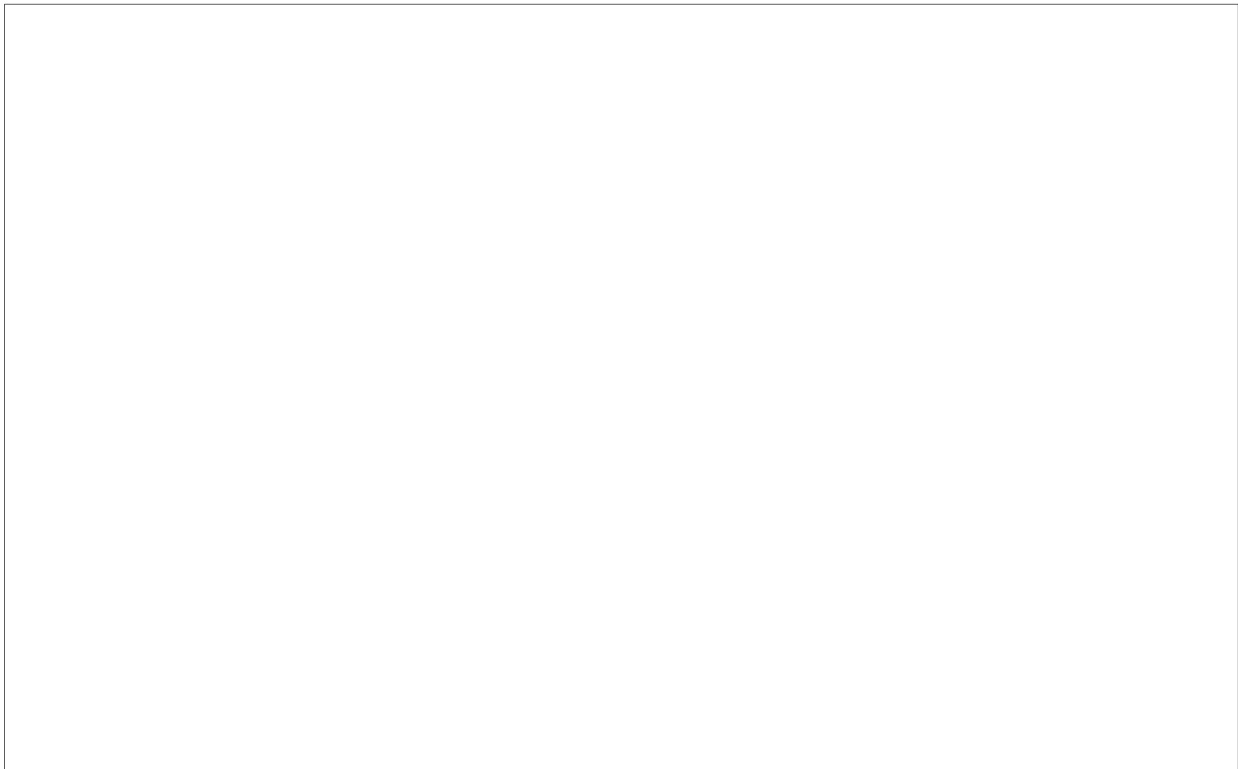
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been given the NPIC interim designator Hohhot-A (HO-A). The two missile railcars are each approximately 17 by 3 meters. The HO-A railcar resembles the type L propellant railcar (Figure 2). On two occasions, the type L propellant railcar was observed in place of the HO-A railcar. Both the type H and HO-A missile railcars may have been adapted from propellant railcar designs to provide environmentally controlled transport for solid-propellant rocket motors. The train is usually configured with the type B4 missile transfer flatcar at one end, the type H missile railcar in the middle, and the HO-A railcar at the other end. The HO-A railcar has never been observed adjacent to the type B4 flatcar, suggesting that the HO-A may contain environmental control machinery while the type H missile railcar carries the missile. (This may, in turn, imply a similar function for the type L propellant railcar, since it too is usually observed coupled with other propellant railcars.) The type B4 missile transfer railcar is [REDACTED] The railcar is used for rail-to-road transfer operations. Like the longer versions of the type B railcar, the type B4 has two narrow-gauge rails along its entire length to facilitate transferring the WU-1 missile airframes from the adjacent type H missile railcar to road transportation.

3. (S/WN) Complete WU-1 missile trains have been observed at the following four installations associated with the WU-1 program:

a. Hohhot Solid Propellant Complex [REDACTED] Figure 3) is responsible for the development and production of the WU-1 solid-propellant rocket motors. The WU-1 train has been seen at Hohhot on numerous occasions since May 1978. The train has generally been seen near a building at the end of a railspur serving the plant. The function of this building, which has no doors other than the rail entrance, has not been determined.

b. Previously, Beijing Guided Missile Plant Nanyuan [REDACTED] Figure 4) was primarily associated with liquid-propellant missile systems. The appearance of WU-1 missile-



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related equipment indicates that the plant has some role in the WU-1 program. Comparisons with US solid-propellant missile programs suggest that the Beijing/Nanyuan plant may be responsible for systems integration, airframe development and testing, and/or possibly final assembly and checkout. The missile's guidance and telemetry systems are probably installed at this plant. The train was first observed in July 1979 and has been present on numerous occasions since that date.

c. Nanjing Guided Missile Plant 307 [ ] Figure 5) has only recently been identified as being missile related. The WU-1 train has been observed here on several occasions beginning in July 1980. The function of the Nanjing plant in the WU-1 program has not yet been determined but probably involves some aspect of the final assembly and checkout.

d. At Wuzhai Missile Test Complex [ ] Figure 6), the WU-1 missile test program has just completed the silo launch flight test phase. The WU-1 train was seen at the complex on [ ] and [ ]. On all three occasions, the train was observed on a rail siding in Support Area 8 of Wuzhai SSM Support Areas 3-8 (BE [ ]). The [ ] WU-1 train probably delivered the WU-1 missile launched on [ ] WU-1 train probably delivered the WU-1 missile launched on [ ] and the [ ] train delivered the missile launched on [ ]. The [ ] train was observed first at Hohhot and subsequently at Beijing/Nanyuan in October and at Nanjing in November, indicating that the missile was probably produced at Hohhot, shipped first to Beijing/Nanyuan and then to Nanjing for final assembly and checkout, and then delivered to Wuzhai for launch. The [ ] train followed the same route, but lack of imagery of Nanjing prevented the observation of the train. A probable WU-

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1 shipment from Beijing/Nanyuan to Wuzhai also occurred in 1980. A WU-1 train and several additional support railcars were observed departing Beijing/Nanyuan on [redacted] (Figure 7). No WU-1 train was subsequently observed at Wuzhai. However, surface erection tests, using a WU-1 missile, began at Wuzhai in September 1980. It could not be determined whether this train went to Nanjing before going to Wuzhai.

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4. (TSR) The WU-1 missile train has also been observed at the following two installations not previously known to be associated with the WU-1 program:

a. Xian SSM Technical Training Facility [ ] Figure 8) is a national-level training center for Chinese missile crews. This facility has not previously been associated with the WU-1 missile. A WU-1 train was seen only on [ ] at Xian Rail-to-Road Transfer Point (RTP; [ ]) This might have been related to an orientation for future WU-1 training at this training center. It is also possible that Xian RTP, although collocated with Xian SSM Technical Training Facility, serves other missile installations in the area. If this is so, the train might have been transporting a WU-1 missile to or from Lantian Solid Propellant Production Complex [ ] 19 nautical miles (nm) to the southeast.

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b. Fengxian Engineering Institute [ ] Figure 9) consists mostly of engineering buildings and associated housing dispersed along an east-west valley, approximately 7 nm south of Fengzhou Guided Missile Engine Plant [ ] an RTP is at the west end of the valley. The institute does not contain facilities suitable for producing solid-propellant missiles. On [ ] three type H missile railcars, one type L propellant railcar, and one type B4 missile transfer flatcar (not shown on the graphic) were observed in the RTP (Figure 9). The type H missile railcars and the type L propellant railcar were coupled together; the type B4 missile transfer flatcar was by itself on a different track. A similarly configured train had been observed the previous March at Beijing/Nanyuan (Figure 10). On that date, two type B4 missile transfer flatcars, positioned between the type H missile railcars, were part of the train. The June and March 1980 trains probably consisted of the same railcars. On [ ] a normally configured WU-1 train was observed at the Fengxian RTP.

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**IMAGERY ANALYST'S COMMENTS**

5. [ ] If the train observed at Xian RTP was transporting a missile to or from Lantian Solid Propellant Production Complex, it would indicate that production of the WU-1 missile might be transferred to Lantian from Hohhot Solid Propellant Complex. This would be consistent with China's policy of relocating defense industries to the country's mountainous interior. The Chinese call this interior area the Third Line of Defense.<sup>1</sup> The CSS-4 production program has already been relocated in this manner. CSS-4 missiles for operational deployment were produced at Wanyuan Guided Missile Plant [ ] in northeast Sichuan Province. If the WU-1 program follows the same pattern, Lantian would be the most likely candidate for WU-1 production, when the WU-1 system reaches operational status.

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6. (S/WN) The presence of WU-1 missile trains at the Fengxian RTP may indicate that the Fengxian Engineering Institute has a possible engineering function in the WU-1 program. However, it is also possible that the RTP is associated with Taibai Probable Strategic Storage Facility [ ], approximately 30 nm east of Fengxian. This facility, which is dispersed along a north-south valley, contains several adits equipped with blast doors and may be used for missile storage or deployment. The RTP at Fengxian resembles RTPs at known Chinese deployed missile complexes. If the Fengxian RTP and the Taibai Facility are related, the two may be part of a land-based deployment program for the WU-1 missile. This suggests that the WU-1 or another solid-propellant missile system may be used in a land-based role.

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**REFERENCES**

**IMAGERY**

(S/WN) All applicable satellite imagery acquired through [ ] was used in the preparation of this report.

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**DOCUMENT**

1. NSA [ ] K/00/12-81, *China's Dispersal of Defense Industry Factories; A Contingency Plan For War (TSC)*, 12 Jan 81 (TOP SECRET [ ])

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\*Extracted information is classified SECRET, [ ]

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(S) Comments and queries regarding this report are welcome. They may be directed to [ ] Asian Forces Division, Imagery Exploitation Group, NPIC, [ ]

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